

## SECTION 01100 – SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.1 PROJECT DESCRIPTION

- A. This project is the design, fabrication and installation of operations room consoles in the Operations Room, training labs and Emergency Management Center at the new Air Traffic Control Systems Command Center. The Operations Room is the centerpiece of the new facility with utilizing approximately 9000 SF of floor space. The consoles will be occupied continuously by air traffic control personnel who monitor various air traffic control and communications systems. The consoles will be populated with PC based equipment including processors, monitors and phone systems.

#### 1.2 PROJECT INFORMATION

- A. Project Identification:

- 1. Project Location: 3701 Macintosh Drive, Warrenton, VA 20187 in Fauquier County. The site is approximately 35 miles west of Washington, DC.
  - 2. Owner: United States Government  
Department of Transportation  
Federal Aviation Administration  
Washington Headquarters  
Washington, DC 20001

- B. Contract Documents: The specifications and drawings for this project were prepared by:

Federal Aviation Administration

- C. Construction Contract Administration: This contract will be administered by an FAA Contracting Officer.
- D. Construction Manager: This construction project will be field managed by an FAA Contracting Officer's Technical Representative (COTR).

#### 1.3 CONTRACT

- A. This project will be administered as a lump sum contract.

#### 1.4 WORK SEQUENCE

- A. The Work shall be conducted in **5** phases.
  - 1. Phase 1: Console design by vendor.
  - 2. Phase 2: Design and shop drawing approval by FAA.
  - 3. Phase 3: Fabrication, assembly and shipping.
  - 4. Phase 4: Installation in Operations Wing.
  - 5. Phase 5: Installation in Administration Wing.

#### 1.5 USE OF PREMISES

- A. General: The contractor is advised of the existing operation of the Potomac Consolidated TRACON to which this new facility will be attached and from where the new facility will derive partial utilities. Contractor's use of premises is limited by the operation of the Potomac Consolidated TRACON. The Contractor, subcontractors, and their employees must comply with the regulations governing access to, operation of, and conduct while on the premises and must perform the work required under this Contract so as not to interfere with the conduct of FAA business or use and occupancy by the FAA. Contractor, subcontractors, and their employees will not have access to any areas outside the scope of this Contract, without permission of the FAA COTR.
- B. Security: Comply with all security requirements of the facility at all times. Contractor personnel shall not be permitted outside the work area for any reason without an FAA guide. Contractor personnel shall be issued a temporary identification badge, which must be displayed at all times on the facility grounds. See Specification Section 01593 for additional information.

#### 1.6 WORK UNDER OTHER CONTRACTS

- A. Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

#### 1.7 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "MasterFormat" numbering system.
  - 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the specifications are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the specification to determine numbers and names of sections in the Contract Documents.

- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
  2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

#### 1.8 MISCELLANEOUS PROVISIONS

- A. Work in the extension of existing conditions shall correspond in all respects with the existing conditions to which it connects, or to similar existing conditions, in materials, workmanship and finish.
- B. Alterations to Existing Conditions: Existing conditions shall be cut, drilled, removed, temporarily removed, or removed and replaced, as necessary for performance of Work under the Contract.
1. Replacement of existing conditions that are removed shall match similar existing conditions.
  2. Unless otherwise indicated, existing structural members shall not be cut or altered without authorization from the FAA COTR.
  3. Conditions remaining in place, which are damaged or defaced during the Work, shall be restored to the condition existing at time of award of Contract.
  4. Discolored or unfinished surfaces exposed by removal of existing conditions, that are indicated to be final exposed surfaces, shall be refinished or replaced as necessary to produce uniform and harmonious contiguous surfaces.
- C. Removed items indicated to remain the property of the FAA shall be stored on site where directed by the FAA COTR.
- D. Construction Documentation
- 1.) The Contractor shall keep at the site copies of the Drawings and Specifications. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications is of like effect as if shown or mentioned in both. In case of differences between Drawings and Specifications, the FAA shall make an interpretation in writing. Interpretations and decisions shall be consistent with the intent of the Contract Documents. The FAA interpretation will be final on matters relating to aesthetic effects.

- 2.) In the event of differences between small and large-scale drawings, the large scale drawings shall govern.
- G. Builders Risk Insurance: The FAA does not carry Builder's Risk Insurance coverage. The Contractor, at his own option and expense, may elect to provide this insurance for its work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION(Not Used)

END OF SECTION 01100

## SECTION 01120 – CONSTRUCTION LIMITS AND ACCESS, USE OF FACILITIES AND WORK HOURS

### PART 1 - GENERAL

#### 1.1 CONSTRUCTION LIMITS AND ACCESS

- A. The contractor shall confine operations, activities and storage of materials to project areas. Sufficient employee parking will be available.
- B. Access for the contractor, subcontractor, employees, deliveries, etc will be coordinated on the project site.
- C. Access to the construction site shall be kept unobstructed.
- D. Vehicles transporting materials shall not be loaded beyond the capacity prescribed by law.

#### 1.2 CONTRACTOR'S USE OF FACILITIES

- A. General: The contractor is advised that the new facility will be physically connected to an existing facility which is a critical air traffic control facility used for the safe and efficient navigation of aircraft. This facility operates 24/7. Contractor shall not connect to any existing utility or service without written approval from the FAA COTR.
- B. Limit use of the premises to work in project areas. Do not disturb portions of the site beyond the areas in which the work is indicated.
- C. The personal use of this facility by the contractor, subcontractors, or suppliers is strictly prohibited.
- D. The contractor and subcontractors shall maintain the job site in a neat and orderly condition. This includes the daily removal of rubbish, waste, tools, equipment and materials not required for the work in progress.
- E. The contractor, subcontractors and suppliers will not be permitted to use the existing dining facilities.

#### 1.3 GOVERNMENT USE AND ACCESS TO PREMISES

- A. Government Occupancy: The government reserves the right to enter the work areas during the term of the contract for periodic inspections and site visits.
- B. The government shall have the right to take possession of or use any completed part of the work. Such possession or use shall not be deemed an acceptance of any work not completed in accordance with the contract requirements. While the government is in such possession, the

contractor shall be relieved of the responsibility of loss or damage to work other than resulting from the contractor's fault or negligence. The contractor shall notify the contracting officer, in writing, if such possession or use by the government delays the progress of the work or causes additional expense to the contractor. A determination shall be made by the contracting officer as to any equitable adjustment in the contract price or time of completion.

#### 1.4 WORK HOURS

- A. Work Schedule: prior to commencing work, the contractor shall furnish a statement indicating the hours and days per week to be worked and approximate number of persons to be employed on the job for the normal work shift to the FAA COTR. Generally, the contractor shall schedule and perform work Monday through Friday, from 7:00 am through 5:30 pm, excluding federally established holidays. Notify the FAA COTR in advance of any changes to the work hours and of planned overtime hours (time outside normal work hours, weekends and holidays).
- B. Deliveries that may potentially be disruptive to the operation of the existing facility will be coordinated in advance with the FAA COTR.

#### 1.5 SECURITY REQUIREMENTS

- A. The contractor shall assume full responsibility for the protection and safekeeping of products, materials, tools and equipment stored on site.
- B. Refer to section 01593 for security access requirements.

END OF SECTION 01120

## SECTION 01593 - SECURITY ACCESS DURING CONSTRUCTION

### PART 1 - GENERAL

#### 1.1 SECURITY REQUIREMENTS

- A. Construction Clearances: After award of the Contract, all Contractor employees shall be required to furnish information for security clearances and shall comply with security regulations as imposed by the FAA.
  - 1. FAA will issue security badges to contractors working at the facility. Applications must be completed and processed prior to gaining access to facility without FAA escorts.

#### 1.2 SECURITY REGULATIONS

- A. Agency Security Regulations: All persons employed within the boundaries of the property or restricted-access areas therein, and all persons permitted to enter such property and areas shall comply with the security regulations that have been established for this Contract.
  - 1. The Contractor agrees on behalf of himself and all subcontractors that the following security regulations will be observed by Contractor and subcontractor personnel on the property. The Contractor shall make it a specific provision of his subcontracts that these regulations be accepted.
  - 2. At the commencement of the work under this Contract, the following security facilities and procedures will apply:
    - a. The Contractor shall provide information about all Contractor and subcontractor personnel and others who require continuing access to the site, before access is required and when access ceases.
    - b. Within 30 calendar days after the award of the Contract, the Contractor shall submit a list on the Contractor's letterhead stationary of all employees, subcontractors and their employees, and others who will perform work or otherwise require access to the site. Personnel shall be listed in alphabetical order by company. The list shall include the full name, social security number and date of birth for each individual.
    - c. Name of any employee added later to the original list shall be submitted with the same information on the Contractor's letterhead stationary at least 30 calendar days in advance of the date of access by the employee.
    - d. The Contractor shall notify the FAA in writing when personnel are no longer employed by the Contractor or a subcontractor. Individual's name, social security number and date of birth, and company who employed the individual, shall be included.
    - e. In order to permit the FAA to supply badges for on-site personnel, the Contractor shall cause each individual to complete a personnel identification form. These forms will be provided by the FAA to the Contractor at the pre-construction conference. Processing of the forms will be performed by the FAA at FAA expense.
    - f. At a time designated by the FAA COTR or when an individual reports to the site for work the first time, a period of 2 hours will be required for security processing,

- including review of identification forms and fabrication of a permanent badge. Personnel will then be permitted to go to work without further processing of identification forms by the FAA, but 15 minutes should be allowed each day for signing in with security to obtain access to the site.
- g. The permanent badge furnished by the FAA to each Contractor employee or other person granted access to the site will serve to authorize the wearer to enter and leave the security area. The badge must be worn so as to be clearly visible at all times when on the work site. The badge will be retained by the individual as long as he requires continued admittance to the site, but the Contractor will arrange for its immediate return to the FAA when such need ceases. Temporary or visitor badges will be provided for persons who are identified as having an infrequent or temporary legitimate business need for access to the site.
3. At the commencement of the work under this contract, the following security procedures shall apply to the Contractor and all subcontractors.
- a. Do not enter the building without building passes or park without parking permits. Vehicle authorization requests shall be required for any vehicle entering the site, and shall be submitted 24 hours before the date and time of access. Access shall be restricted to picking up and dropping off materials and supplies, and, with a permit issued by the FAA, to parking in designated areas.
- b. Comply with the security regulations of the building.
- c. In the case of any questions as to the eligibility of an individual to obtain a pass, notify the FAA COTR, who will obtain a determination whether the individual can obtain a pass.
- d. Cameras are not permitted without written permission from the FAA COTR. If approved, permission will be granted in writing and will provide additional guidelines.
- e. Personnel may be subject to inspection of their personal effects when entering and leaving the facility. In addition, unscheduled inspections of personnel may be made while on site.
4. The FAA reserves the right to close down the job site and order Contractor personnel off the premises in the event of a national emergency or a shut-down, for as long as security problems persist. The Contractor may only return to the site with approval from the FAA and the FAA COTR.
5. The FAA reserves the right to exclude or remove from the site or building any employee of the Contractor or a subcontractor whom the FAA deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the work is deemed by the FAA to be contrary to the public interests. The FAA further reserves the right to complete processing of the security documentation for personnel assigned to work within restricted access areas prior to access to such areas by the personnel.
6. No interviews shall be conducted within the secured area. The Contractor and subcontractors will be required to maintain a field office, outside the limits established by the security area, for all public contacts. Applicants for employment and other persons not entitled to access to the secured area shall be required to contact the Contractor or subcontractor at these offices.
7. For overtime work, the Contractor shall give the FAA COTR at least 3 calendar days notice. This notice is required so that security escorts may be provided and is separate and distinct from any notices required for utility shutdown or other outages. Also, the Contractor shall notify the FAA if personnel will not report to the job site on a particular day so that the security escort can be released for other duties.

8. A detailed weekly schedule shall be submitted once a week by the close of business on the last day of the previous week's work. The schedule shall include the following:
  - a. Specific location of work for each trade.
  - b. Description of work for each trade.
  - c. Number of persons who will be on site for each location and trade.
  - d. Specific impacts required, such as equipment or utility shutdowns.
  - e. Hours of operation.

END OF SECTION 01593

## SECTION 10270 - ACCESS FLOORING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Provide the following:
  - 1. Gravity-held panels on bolted stringer understructure.
  - 2. Refer to drawings for conductive floor finishes.
    - a. Conductive high pressure laminate shall be factory-applied.
    - b. Refer to Section 09681 "Carpet Tile" for loose-lay conductive carpet tile on bare panel in Ops Room Location.

#### 1.2 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
  - 1. D2859: Test Method for Flammability of Finished Textile Floor Covering Materials
  - 2. E648: Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
  - 3. E699: Standard Criteria for Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance With Test Methods Promulgated by ASTM Committee.
- B. National Electrical Manufacturers Association (NEMA)
  - 1. LD3: High Pressure Decorative Laminates.
- C. National Fire Protection Association (NFPA)
  - 1. 75: Standard for the Protection of Electronic Computer/Data Processing Equipment.
  - 2. 99: Health Care Facilities.

#### 1.3 DEFINITIONS

- A. Concentrated Static Load: Concentrated loads are applied on a small area and are typically imposed by stationary furniture and equipment with legs. A concentrated load is applied to the surface of the panel resulting in deflection and permanent set. Deflection and permanent set (rebound) is measured at the top surface after the load is removed.
- B. Uniform Static Load: Uniform loads are applied over the entire area of the panel and are typically imposed by stationary furniture and equipment without legs. The uniform load rating is specified in pounds per square foot.

- C. Ultimate Static Load: The load at which the panel has structurally failed and can no longer accept any loading. This is sometimes expressed as a multiple of concentrated load and referred to as a safety factor.
- D. Rolling Dynamic Load: Rolling loads are typically imposed by equipment on wheels moving across the access floor. They are defined by the number of passes, size and hardness of wheel and the combined weight of the cart and its contents on each wheel. Rolling loads are the most important performance criteria because they have a more damaging effect on the panel than a static load.
- E. Impact: Impact loads are imposed by objects accidentally dropped onto an access floor. These loads are defined by the weight of the load and the height or distance dropped. Impact loads generate severe shocks which can cause structural and panel damage. Impact loads most often occur during construction, move in and equipment/furniture rearrangements.
- F. Non-Combustibility: Non-Combustibility defines the floor system's susceptibility to fire and its capability to generate smoke or toxic vapors.
- G. Static Dissipation: The floor system's capability to create an effective path for static charge dissipation can be critical in areas where sensitive equipment is operated.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Performance Requirements, General: Provide access-flooring systems to comply with the following:
  - 1. Access flooring systems are proprietary portable systems composed of modular floor panels on elevated supports (understructures) forming accessible underfloor cavities (air spaces) to accommodate electrical and mechanical services.
  - 2. Installed access flooring system shall comply with performance requirements specified as determined by manufacturers' current standard products representing those indicated for this Project.
  - 3. System shall be tested as required in Section 15950 "Testing, Adjusting, and Balancing." Tests shall be performed with solid access floor panels with no cutouts. Provide additional panels as required to perform this test.
- B. Structural Performance per Cisca A/F: Install access flooring systems capable of supporting the loads indicated in this Article, within limits and under conditions indicated, as demonstrated by testing according to the referenced procedures in Ceilings and Interior Systems Construction Association's (Cisca) "Recommended Test Procedures for Access Floor." This publication and its procedures are referenced elsewhere in this Section as Cisca A/F.
- C. Floor Panels:

1. Concentrated-Load Performance: Panel shall be capable of supporting a concentrated load of 1250 pounds, placed on a one square inch area (using a round or square indenter) at any location on the panel with a maximum top surface deflection of 0.100 inches. Panel shall not exceed a permanent set of 0.010 inches, after the load is removed. Panel shall demonstrate ductility by being loaded to a deflection of 0.100 inches without incurring damage.
  2. Uniform Load: Panel shall be capable of supporting a uniform load of 300 pounds placed on a one square foot area at any location on the panel with a maximum top surface deflection of 0.060 inches. Panel shall not exceed a permanent set of 0.010 inches after the load is removed. Note: The uniform load rating of an access floor panel as specified herein should not be confused with the uniform live load as specified in seismic zone applications.
  3. Ultimate Load Performance: Panel shall be capable of withstanding a concentrated load of 3,100 pounds applied onto a one square inch area (using a round or square indenter) at any location on the panel without failure. Failure is defined as the point at which the panel will no longer accept the load. Certified test report shall be provided attesting to this ultimate load.
  4. Rolling Load; Panel and supporting understructure shall be able to withstand the following rolling loads at any location on the panel without developing a local and overall surface deformation greater than 0.040 inches. Note: Wheel 1 and wheel 2 tests shall be performed on two separate panels.
    - a. Wheel 1: Size 3-inch dia. By 1-13/16-inch wide: Load: 1000 lbs. Passes:10
    - b. Wheel 2: Size 6-inch dia. By 1-1/2-in wide: Load: 800 lbs. Passes: 10,000.
  5. Impact Load: Panel and supporting understructure shall be capable of supporting an impact load of 150 pounds dropped from a height of 36 inches onto a one square inch area (using a round or square indenter) at any location on the panel.
  6. Panel Drop Test: Panel shall be capable of being dropped face up onto a concrete slab from a height of 36-inches after which it shall continue to meet all load performance requirements as previously defined.
  7. Panel Cutout: Panel with 8-inch diameter cutout shall be capable of withstanding an ultimate load without failure of 1,500 pounds anywhere on the panel.
  8. Flammability: System shall meet Class A spread requirements for flame spread and smoke development. Tests shall be performed in accordance with ASTM-E-84-1008, Standard Test Method for Surface Burning Characteristics for Building Materials.
- D. Pedestals: Provide pedestals with the following:
1. Axial Load: Pedestal assembly shall provide a minimum 6,000-pound axial load without permanent deformation.
  2. Overturning Moment: Pedestal assembly shall provide an average overturning moment of 1,000-in-lbs. when glued to a clean, sound, uncoated concrete surface. ICBO number for

the specific system or structural calculations shall be required to the lateral stability of the system under seismic conditions.

3. Concentrated Loads (Static Load): 1,250 pounds.
4. Uniform Loads (Static): 300 pounds.
5. Ultimate Loads (Static): 3,750 pounds.
6. Rolling Load: 1,000 pounds at 10 passes. 800 pounds at 10,000 passes.
7. Impact Load: 100 pounds.

- E. Panel to Understructure Resistance: Not more than 10 ohms.
- F. Electrical Resistance: Not less than  $2.5 \times 10^4$  ohms, nor more than  $1.0 \times 10^8$  ohms, as determined by testing identical products according to the method for conductive flooring specified in NFPA 99, RTT, RTG, point-to-point (diagonal corner-to-corner across face of panel), point-to-ground, and tile-to-tile. Tile-to-tile method shall be tested across the seams. Total combined electrical resistance at the floor covering systems shall include carpet tile, conductive adhesive, foil, connectors, clips, access floor panels, and pedestal heads, to groundable point, and shall be less than  $1.0 \times 10^8$  when tested in accordance with NFPA 99, RTT, RTG. Conduct test measurements at five different locations at installed area.

#### 1.5 SUBMITTALS

- A. Product Data for each type of access flooring component specified. Include Material Safety Data Sheets (MSDS) for adhesives.
1. Submit manufacturer's specifications and installation instructions and independent ESD test data for carpet.
- B. Shop Drawings showing complete layout of access flooring components based on field-verified dimensions; include dimensional relationships to adjoining work and installation tolerances. Include details, with descriptive notes indicating materials, finishes, fasteners, typical and special edge conditions and gaskets, accessories, understructure, and other data to permit a full evaluation of entire access flooring system.
- C. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Test reports from a qualified independent testing agency evidencing compliance of installed access flooring system with performance requirements specified based on in-place testing or installed system.
- F. Data on earthquake-load resistance, essential facility, in the form of structural computations that have been signed and sealed by a qualified professional engineer responsible for their preparation. Include structural computations, material properties, and other information needed for structural analysis and for verification that system will withstand earthquake loads indicated. Refer to structural drawings for exact seismic requirements.

- G. Certification: Certify that electrical resistance of the grounded flooring and floor covering system complies with performance requirements specified, when tested in accordance with NFPA 75 test methods.
- H. Provide maintenance information for access floor system. Include instruction for proper removal and re-installation of panels to prevent damage. Refer to Section 01782 "Operation and Maintenance Manual Data."

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who is experienced in installing the types of access flooring indicated for this Project.
- B. Testing Agency Qualifications: To qualify for approval, an independent testing agency must demonstrate to COTR's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.
- C. NFPA Standard: Provide access flooring system complying with NFPA 75 and install to comply with NFPA 75 requirements for raised flooring.
- D. Single-Source Responsibility: Obtain access flooring from one source and by single manufacturer.
- E. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located, and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of access flooring systems that are similar to that indicated for this Project in material, design, and extent.
- F. Provide floor panels that are clearly and permanently marked on their underside with the panel type and concentrated load rating.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver access flooring components in original, unopened packages, clearly labeled with manufacturer's name and item description.
- B. Handle and store packages containing access flooring in a manner, which avoids damaging components and overloading building structure.

1.8 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of access flooring until installation area is enclosed and has an ambient temperature of between 40 and 90 deg F and a relative humidity of not more than 70 percent.
- B. Field Measurements: Check actual locations of walls and other construction to which access flooring must fit by accurate field measurements before preparing Shop Drawings; show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.9 COORDINATING AND SCHEDULING

- A. Coordination of Work: Coordinate location of mechanical and electrical work in underfloor cavity to prevent interference with access flooring pedestals.
- B. Mark pedestal locations with a grid of size indicated below on concrete subfloor so that mechanical and electrical work can proceed without interfering with pedestals.
  - 1. 120 by 120 inches.
- C. Do not proceed with installation of access flooring until after Substantial Completion of other construction within affected spaces.

1.10 WARRANTY

- A. Special Perforated Panel Warranty: Written warranty, signed by access flooring manufacturer agreeing to replace perforated panels that fail within the warranty period. Manufacturer warrants full replacement of panels due to breakage, cracking and splitting between the perforations. Warranty does not include breakage due to unusual traffic, failure of substrate, vandalism or abuse.
  - 1. Warranty Period: 10 years from date of Substantial Completion.

1.11 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.
  - 1. Field Panels and Understructure: Furnish quantity of standard field panels and understructure components equal to 2 percent of amount installed.

PART 2 - PRODUCTS

2.1 ACCESS FLOOR SYSTEM - GENERAL

- A. Access floor system shall be compatible and inter-changeable with existing access floor system.

2.2 MANUFACTURER

- A. Known Acceptable Sources: Subject to compliance with requirements, manufacturers offering access flooring that may be incorporated in the Work include the following:

1. ConCore 1250 Panel, manufactured by Tate Access Floors, Inc., including accessories as specified in this Section.

2.3 FLOOR PANELS

- A. General: Modular field panels shall be similar to industry standard products. Provide accessible panels that will allow one person, using a portable lifting device, to interchange with field panels without disturbing adjacent panels or understructure. When properly installed, furnished panels will be free of exposed-metal edges with floor covering in place.

1. Nominal Panel Size: 24 by 24 inches.
2. Panel Attachment to Understructure: By gravity.
3. Fabrication Tolerances: Fabricate panels to the following tolerances with squareness tolerances expressed as the difference between diagonal measurements from corner to corner.
  - a. Size and Squareness: Plus or minus 0.015 inch of required size, with a squareness tolerance of plus or minus 0.030 inch, unless tolerances are otherwise indicated for a specific panel type.
  - b. Flatness: Plus or minus 0.030 inch, measured on a diagonal on top of panel.

- B. Panel shall have an electrically conductive epoxy paint finish.
- C. Corner of panel shall have a locating tab and integral shape design to interface with the pedestal head for positive lateral retention and positioning with or without fasteners.
- D. Fit between the pedestal head, panel, and screw shall enable an installation with an average panel-to-panel gap of 0.015-inch.

2.4 FLOOR PANEL COVERING – CARPET

- A. Panel shall have loose-lay conductive carpet tile with conductive adhesive. Refer to Section 09681 "Carpet Tile."

## 2.5 FLOOR PANEL COVERING – HIGH PRESSURE CONDUCTIVE LAMINATE

- A. Conductive Properties: Provide floor coverings with static-control properties indicated as determined by testing identical products per test method indicated by an independent testing and inspecting agency.
1. Electrical Resistance: Test per ASTM F 150 with 500-V applied voltage or NFPA 99, Annex E.
    - a. Average greater than 25,000 ohms and less than 1 megohm when test specimens and installed floor coverings are tested surface to surface (point to point).
    - b. Average no less than 25,000 ohms with no single measurement less than 10,000 ohms when installed floor coverings are tested surface to ground.
  2. Static-generation values reported by manufacturers may be limited by sensitivity of testing equipment used; consult manufacturers if static generation is critical.
  3. Thickness: In manufacturer's standard thickness, but not less than 0.08 inch.
  4. Size: Sized to fit on panels; 24 by 24 inches.
  5. Seaming Method: Installed in factory by access flooring manufacturer.
  6. Colors and Patterns: Refer to Interior Materials Finish Schedule.

## 2.6 UNDERSTRUCTURE

- A. Pedestals: Assembly consisting of base, column with provisions for height adjustment, and head (cap); made of steel.
1. Base: Square, 5 inch by 5 inch by 1/8 inch thick base plate, Type 1 Pedestal Base, designed for bracing and supporting pedestals, bolted to slab.
  2. Provide vibration-proof leveling mechanism for making and holding fine adjustments in height over a range of not less than 2 inches. Include means of locking leveling mechanism at a selected height that requires deliberate action to change height setting and prevents vibratory displacement.
  3. Head: Designed for direct, non-bolted support of panels.
    - a. Provide sound-deadening pads or gaskets at contact points between heads and panels.
  4. Post-installed Expansion Anchors: Where required to comply with performance requirements, provide expansion anchors that have the capability to sustain, without failure, a load equal to 5 times that specified under Part 1 Article "Performance Requirements."
- B. Stringer Systems: Modular steel stringer systems made to interlock with pedestal heads and form a basket weave pattern placing stringers under each edge of each floor panel and a pedestal under each corner of each floor panel. Protect steel components with manufacturer's standard galvanized or corrosion-resistant paint finish.

1. Bolted Stringers: System of main and cross stringers connected to pedestals with threaded fasteners accessible from above.
  - a. Provide continuous gasket at contact surfaces between panel and stringers to deaden sound, to seal off underfloor cavity from above, and to maintain panel alignment, position, and plenum floor air pressure.
  - b. Provide stringers to support each edge of each panel where required to meet design-load criteria.

## 2.7 ACCESSORIES

- A. Colors and finishes: For exposed accessories available in more than one standard color or finish, provide color or finish complying with Interior Finish Material Schedule.
- B. Cutouts: Contractor shall coordinate with COTR quantity and location of floor cutouts. Fabricate cutouts for floor panels for cable penetrations. Comply with requirements indicated for size, shape, number, and location. Provide reinforcement or additional support, if needed, to make panels with cutouts comply with standard performance requirements.
  1. Provide trim edge of cutouts with manufacturer's standard plastic molding or grommets.
  2. Provide airtight installation to maintain integrity of underfloor plenum.
  3. Fit cutouts with manufacturer's standard grommets in sizes indicated or, where size of cutouts exceed maximum grommet size available, trim edge of cutouts with manufacturer's standard plastic molding having tapered top flange.
    - a. Provide removable covers for grommets.
  4. Seal cutouts to comply with manufacturer's requirements.
  5. Provide foam-rubber pads for sealing annular space formed in cutouts by cables and trim edge of cutout with molding having flange and ledge for capturing and supporting pads.
- D. Panel Lifting Device: Manufacturer's standard portable lifting device of type and number required for lifting panels with floor covering provided.
  1. Provide 4 lifting devices of each type required.
- E. Perforated Panels: Provide load bearing perforated panels with 25 percent open area interchangeable with standard field panels and complying with the following requirements:
  1. Air-Distribution Characteristics of Units With Dampers: Capable of delivering 390 cfm at 0.05-inch wg static pressure.
  2. Structural Performance: Capable of supporting a 1250-lbf concentrated load.
  3. Number of Grilles: As indicated on Drawings.
  4. Finish: Conductive HPL as indicated on Interior Materials Finish Schedule.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Locate each pedestal, complete subfloor preparation, and vacuum clean the subfloor to remove dust, dirt, and construction debris before beginning installation.
- B. Closures: At column enclosures within access floor area seal penetrations at column bases airtight with neoprene gasketing.

### 3.2 COORDINATION

- A. Coordinate with carpet installers for installation of loose-lay carpeting on access flooring system. Carpet installation shall be completed prior to testing of access flooring system.

### 3.3 INSTALLATION

- A. Install access flooring system and accessories to produce a rigid, firm installation that complies with performance requirements and is free of vibration, rocking, rattles, and squeaks.
- B. Bolt base plate holding pedestal to floor.
- C. Lay out floor panel installation to keep the number of cut panels at the floor perimeter to a minimum. Scribe perimeter panels to provide a close fit with adjoining construction with no voids greater than 1/8 inch where panels abut vertical surfaces. Provide neoprene gasketing along perimeter to provide airtight seal.
- D. Secure stringers to pedestal head according to the access flooring manufacturer's instructions.
- E. Scribe underfloor-cavity dividers to closely fit against subfloor surfaces and seal with mastic to maintain plenum effect within underfloor cavity.
- F. Scribe vertical closures to closely fit against subfloor and adjacent finish floor surfaces. Set in mastic and seal to maintain plenum effect within underfloor cavity.
- G. Clean dust, dirt, and construction debris caused by floor installation, including vacuuming the subfloor area, as installation of floor panels proceeds.
- H. Perimeter Support: Provide method for supporting panel edge and form transition between access flooring and adjoining floor covering at same level as access flooring.
- I. Do not cut and trim access flooring components or perform other dirt-or-debris-producing operations in the rooms where the floor is being installed.

- J. Cut and trim access flooring and perform other dirt-or-debris-producing operations as remotely as possible from installation area and to prevent contamination of subfloor under access flooring already installed.
- K. Level installed access flooring to within 0.10 inch of true level over the entire access flooring area and within 0.062 inch in any 10-foot distance.
- L. Carpet Installation: Refer to Section 09681 "Carpet Tile" for locations that will receive loose-lay carpet tiles.
- M. Grounding: Refer to Section 16452, "Grounding."

### 3.3 TESTING

- A. Testing Electrical Resistance: Testing shall be in accordance with NFPA 99 modified by placing one electrode on the center of panel surface and connecting the other electrode to the metal flooring support. Measurements shall be made at five or more locations. Each measurement shall be the average of five readings of 15 seconds duration at each location. Relative humidity and temperature during tests shall be 45 to 55 percent and 69 degrees F to 75 degrees F, respectively. The panels used in the testing shall be selected at random and shall include two panels most distant from the ground connection. Electrical resistance shall be measured with instruments, which are accurate within two percent and have been calibrated within 60 calendar days prior to the performance of the resistance tests.
- B. Coordinate with mechanical testing and balancing technician for testing as specified in Section 15950 "Testing, Adjusting and Balancing."

### 3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjusting: Re-level and re-adjust floor prior to substantial completion and to satisfaction of COTR.
- B. After completing installation, vacuum clean access flooring and cover with continuous sheets of reinforced paper or plastic. Maintain protective covering until the time of Substantial Completion.
- C. Replace access flooring panels that are stained, scratched, otherwise damaged, or not complying with specified requirements.

END OF SECTION 10270

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## **SECTION 12361 – OPERATIONS ROOM CONSOLES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of this Console Contract including Division 1 Specifications apply to this Section.
  - 1. Operations Room Consoles- Overall Layout
  - 2. Typical Console-Plan, sections and elevations
  - 3. List of Consoles
  - 4. List of components for each console.

#### **1.2 SUMMARY**

- A. This Section includes but is not limited to the following console requirements:
  - 1. Framing
  - 2. Cladding
  - 3. Work surfaces
  - 4. Shelves
  - 5. Lighting
  - 6. Internal Cable Management
  - 7. File and storage units
  - 8. Console Hardware
  - 9. Slat-wall
  - 10. Articulating Arms
  - 11. Console Ventilation
  - 12. Electrical Distribution (including dedicated space)
  - 13. Data and Phone Distribution (including dedicated space)
  - 14.
- B. Related Sections include the following:
  - 1. Access Flooring System 10270 (for reference only).

#### **1.3 PERFORMANCE REQUIREMENTS**

- A. Structural Performance: Provide consoles and support framing capable of withstanding the effects of the following gravity loads and stresses, per support framing module, without permanent deformation excessive deflection, or binding of drawers and doors.

1. Fixed Shelves: 200 lbs concentrated
  2. Slide Out Shelves: 100 lbs concentrated
  3. Work Surface: 50 lbs/lf
  4. Top of Support Framing System: 500 lbs concentrated
  5. Top of Base Cabinet: 350 lbs concentrated
- B. Seismic Performance: Provide console casework and support framing capable of withstanding the effects of earthquake motions determined according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures".
1. Seismic Design Criteria:
    - a. Seismic Design Category A
    - b. Seismic Importance Factor 1.5
- C. Functional Flexibility: Console Design shall be a modular component system which will allow the owner complete flexibility for the entire reconfiguration of the consoles for any future functional needs. The system will be comprised of a multitude of variable sized components, which will enable the user to reconfigure the console arrangement into a variety of shapes and sizes, while minimizing the need for additional parts..
- D. Functional Accessibility: System shall be accessible from all sides of the consoles, including top and bottom, with minimal impact to the user or service technician
- E. Ergonomics: In addition to meeting UFAS and ABA requirements, design of consoles will enable the users to perform their job function at the console positions through ergonomically enhanced features. Ergonomic design shall be compliant with ANSI, ISO and BIFMA standards
- F. Aesthetics: The console Vendor shall be responsible for all finishes and components of consoles to insure a consistent product conducive to a Control Room Environment.
- G. Environmental: During the design process, consideration should be made regarding sustainability of materials, employing recycled materials, energy efficient characteristics, employing a green organic approach consistent with the LEEDS process. In addition all components, binders, bonders, adhesives, paints and finishes shall contain low or no volatile organic compounds (VOC's).
- H. Fire Retardant and Smoke: Console components shall meet the minimum requirements for fire retardant requirements. Surface burning characteristics of finishes in accordance with ASTM E84 or UL723
- I. Mechanical: Air circulation within the console.

#### **1.4 SUBMITTALS AND DELIVERABLES**

- A. Product Data: For each type of product indicated.
1. Manuals

2. Installation instructions for reconfigurations
  3. Warranties
- B. Design and Shop Drawings: For consoles. Include scaled CAD plans, elevations, sections, isometrics, details, list of components for each numbered console and attachments.
1. Indicate locations of blocking and reinforcements required for installing console components.
  2. Include details of utility spaces showing supports for cable management systems.
  3. Include details of support framing system.
  4. Indicate locations of and clearances from adjacent walls, doors, windows, other building components, and other console or miscellaneous equipment.
  5. Include coordinated dimensions for consoles equipment specified in other Sections.
  6. Indicate slat-wall configurations.
  7. Indicate number, type and location of articulating arms for monitors including size of monitor being supported.
  8. Indicate space for all electrical and communications outlets for each individual console.
  9. Indicate number, type and location of lighting fixtures for each console.
  10. Include all ergonomic clearances (eg. knee space) as well as sightline obstruction to large screen monitors.
  11. Indicate exhaust fans and louvers in console panels.
  12. Indicate areas restricting access to raised floor system below.
  13. All components shall contain a parts number for ordering parts for future reconfigurations.
- C. Samples for Initial Selection: Submit samples as follows:
1. Countertop material
  2. Cladding
  3. Hardware
  4. Shelves
  5. Lights
  6. Articulating Arms with cable management
  7. Frame
  8. Electrical outlets
  9. Power strips
  10. Data jacks
  11. Grounding considerations
  12. Seismic restraints
  13. Slat wall configuration
  14. Adjustable legs
- D. First Article: Provide a first article unit for inspection by FAA. The first article shall be a complete unit to include a sample of every detail and appurtenance expected throughout project. Unless otherwise directed, approved unit will become part of the completed work if unit remains in the post production condition. The first article unit shall include the following:
1. One complete 10' console to include cladding, doors and countertop with proposed finishes.

2. One full-size, finished base cabinet complete with hardware, 1 pencil drawer, 2 storage drawers.
  3. All internal equipment supports and cable management.
  4. Power and communications outlets.
  5. One of each type of articulating arm with cable management assembly and accessory item specified.
  6. Seismic restraints.
  7. Stackable slat wall with internal cable management.
- E. Templates: One month prior to shipping of approved consoles assembled at manufactures location, console manufacturer will provide full size templates per each console.
1. One full size floor template for each console shall be installed at the Command Center one month prior to the arrival of consoles.
  2. Prior to shipping of consoles FAA will approve templates and their installed locations at the Command Center Control Room.
  3. Template will indicate all structural and seismic support locations.
  4. Template will indicate all areas of obstructions preventing location of console conduit feeds from raised floor below.
  5. Templates will indicate areas restricting access to raised floor system below.

## **1.5 QUALITY ASSURANCE**

- A. The manufacturer shall have a minimum of 7 years experience in console design, production and installation.
- B. All console components shall be manufactured or compatible with the console manufacturer.
- C. The manufacturer shall be ISO 9001 certified.
- D. The applicable standards of the following organizations shall be enforced:
1. ANSI and ABA for human factors design
  2. BIFMA for furniture systems design guidelines
  3. UL for electrical systems listings
  4. ASME for material characteristics
  5. AWS for welding of materials
  6. NFPA for life safety and fire protection requirements
  7. OSHA for occupational safety requirements
  8. IBC for general building code compliance
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

## **1.6 DELIVERY, STORAGE, AND HANDLING**

- A. All deliveries shall be coordinated through the COTR.
- B. Contractor shall assume all costs related to delivery, storage and handling.
- C. Protect finished surfaces during handling and installation with protective covering of polyethylene film or other suitable material.
- D. Console manufacturer shall store consoles until facility under construction is ready for acceptance. Closely coordinate this scheduled event with the FAA.
- E. No onsite storage or staging will be available at the facility.
- F. Vendor will need to make provisions for delivery. There will be not be 4' high truck dock or lift devices. Fork trucks/lifts will not be available.
- G. In the event of an unforeseen delay the vendor shall submit the daily cost for storage should the condition arise.
- H. All dumpster and disposal costs will be the responsibility of the contractor.

#### **1.7 PROJECT CONDITIONS**

- A. This facility operates twenty-four (24) hours per day, seven (7) days per week, as such the FAA will not tolerate any outages, interruptions or delays. We reserve the right to cancel or suspend delivery, and/or installation of work during the duration of the project.
- B. Operations Room of facility can receive consoles once partial beneficial occupancy of new facility has been established. Remainder of facility will still be under construction.
- C. Contractor will be made aware of other ongoing modernization and construction contracts at this facility. Contractor must cooperate fully with separate contractors so work on all contracts may run properly, and not interfere with or delay work under this contract.
- D. Environmental Limitations: The FAA will advise the contractor when the operations room consoles can be delivered and installed.
- E. Consoles will be installed on raised access floor having a concentrated load value of 1250 lbs and a uniform load rating of 300 pounds per square feet.

#### **1.8 COORDINATION**

- A. Contractor will coordinate with the FAA, the layout and installation of framing and reinforcements for support of consoles.

- B. Contractor will coordinate installation of consoles with installation of access floor system panels and support grid, under floor electrical cable trays, junction boxes, panels and other adjacent equipment.
- C. Contractor will supply the FAA with templates four (4) weeks prior to delivery of consoles to insure work required for console installation is complete prior to installation.
- D. The facility is under construction, and as such, the contractor must interface with the FAA to ensure proper coordination with other contractors on site for the duration of the project.
- E. Contractor shall be responsible for all installation and delivery personnel while on site. See section 01593.
- F. Weekly progress updates will be required to be submitted to FAA during design and fabrication phases.
- G. Weekly progress meetings will be conducted by the installer during delivery and installation phases.
- H. Contractor will provide training and familiarization of console composition, layout and operation for FAA maintenance technicians. Provide (3) 2 hours sessions to be scheduled with the FAA COTR.

## **1.9 EXTRA MATERIALS**

- A. Furnish complete touchup kit for each type and color of exposed console components provided. Include fillers, primers, paints, and other materials necessary to perform permanent repairs to any console damaged finish that may occur after the final acceptance by the FAA. Any damage to the consoles incurred prior to acceptance shall be replaced and will not be repaired in the field.
- B. Furnish extra materials, as described below, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Connecting Hardware and Fasteners: Quantity equal to 5 to 10 percent of amount installed, but no fewer than 20 of each type.
  - 2. Modular Countertop Units: Two extra units of each length and material installed.

## **PART 2 - PRODUCTS**

### **2.1 CONSOLE FEATURES**

- A. Console Metal Frame: Cold-rolled commercial steel sheet, complying with ASTM A 1008/A 1008M, powder coated finish or series 6063 aluminum.
  - 1. Sizes and shapes as required to support console structural loads with a factor of safety of 20%.

- B. Work surface: General: Provide units with smooth surfaces in uniform plane free of defects. Make exposed edges and corners straight and uniformly beveled. Provide front and end overhang of 1".
  - 1. Seamless Plastic-Laminate
    - a. Work surfaces: Plastic-laminate sheet, complying with NEMA LD 3, shop bonded with waterproof adhesive to both sides of 1" thick core.
    - b. Plastic-Laminate for flat countertops: HGS or HGL
    - c. Plastic-Laminate Type for Side or End Panels: HGP.
    - d. Plastic-Laminate Type for Doors: HGP.
    - e. Countertop Core: Hardwood-faced plywood, medium-density-fiberboard, or .45 lb industrial grade particleboard complying with ANSI A208.1, Grade M-2, Exterior Glue.
    - f. Colors, Textures, and Patterns: As selected by FAA from plastic-laminate manufacturer's full range
- C. Work surface Nosing: Impact absorbing nosing on all exposed work surfaces.
- D. Cladding: 1" thick particleboard with thermo-fused melamine laminate. Provide panels with flame-spread and smoke-developed indices of not more than 25 and 50, respectively, as determined by testing identical products per ASTM E 84 by UL
- E. Access Panels- Shall be finished on all faces and edges and z-clipped fastened to frame. Panels shall be removable by simply lifting panel vertically off z-clip and removing horizontally. Align clips to insure snug fit that is properly aligned with adjacent panels and frame.
- F. Storage drawer assembly (movable): with lockable caster, capable of storing under console with face of cabinet to be flush with edge of work surface in stored position.
- G. Support arms: Fronts made from outer and inner pans that nest into box formation, with no raw metal edges at top. Sides, back, and bottom fabricated in one piece with rolled or formed top of sides for stiffening and comfortable grasp for drawer removal. Weld drawer front to sides and bottom to form a single, integral unit. Provide drawers with rubber bumpers, ball-bearing slides, and positive stops to prevent metal-to-metal contact or accidental removal.
- H. Fixed Shelves: Shelves shall be perforated for air flow. Front, back, and ends formed down, with edges returned horizontally at front and back to form reinforcing channels. Arrange for vertical CPU with dimensions of: width 8", length 18", height 18", weight 50 lbs. Orientation shall be front to back, vertical.
- I. Utilities: Provide space, cutouts, and holes for cable management systems, conduits, and fittings in console bodies to accommodate utility services and their support-strut assemblies.

## 2.2 CONSOLE SYSTEM

- A. General: Provide console manufacturer's standard integrated system that includes support framing, suspended modular cabinets, filler and closure panels, countertops, and fittings needed to assemble system. System includes hardware and fasteners for securing support framing to permanent construction.

1. Console components can be removed and reinstalled without use of special tools for relocation within system.
  2. Base storage cabinets with one pencil drawer and two storage drawers can be removed without providing temporary support for countertops.
  3. System consists of filler and closure panels to close spaces between support framing, cabinets, shelves, countertops, floors, and walls, unless otherwise indicated. Fabricate panels from same material and with same finish as cabinets and with hemmed or flanged edges.
- B. Support Framing: Console manufacturer's standard system consisting of vertical supports and connecting braces and rails as follows:
1. Monitors, shelves, lighting and countertops are supported from vertical supports. Vertical positioning of supported cabinets, shelves, and countertops can be varied in 1-inch increments through full height of supports.
  2. Vertical supports rest on adjustable leveling bases and are secured to floor with metal clips fastened to floor.
  3. Vertical supports are installed with braces and rails connecting them to each other and to concrete slab below access floor system to create a stable, rigid structure with framed utility spaces where indicated.
  4. Vertical supports are braced at floor with cantilevered horizontal leg members where indicated.
- C. Task-Lighting Fixtures: Mounted to articulating arms.
- D. Countertops: Provide in modular lengths without seams.

## 2.3 CONSOLE HARDWARE

- A. General: Provide console manufacturer's standard satin-finish, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.
- B. Hinges: Stainless-steel, 5-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide 2 for doors 48 inches (1200 mm) or less in height and 3 for doors more than 48 inches (1200 mm) in height.
- C. Pulls: Stainless steel fastened from back with two screws.
- D. Door Catches: Nylon-roller spring catch or dual, self-aligning, permanent magnet catch. Provide 2 catches on doors more than 48 inches in height.
- E. Drawer Slides: Powder-coated, full-extension, self-closing, heavy-duty drawer slides; designed to prevent rebound when drawers are closed; with nylon-tired, ball-bearing rollers; complying with BHMA A156.9, Type B05091, and rated for 150 lbf (670 N).

## 2.4 COUNTERTOPS

- A. Countertops, General: Provide units with smooth surfaces in uniform plane free of defects. Make exposed edges and corners straight and uniformly beveled. Provide front and end overhang of 1 inch.
- B. Seamless Plastic-Laminate:
  - 1. Countertops: Plastic-laminate sheet, complying with NEMA LD 3, shop bonded with waterproof adhesive to both sides of 1 inch thick core.
  - 2. Plastic-Laminate Type for Flat Countertops: [HGS] [HGL].
  - 3. Plastic-Laminate Type for Side or End Panels: HGP.
  - 4. Plastic-Laminate Type for Doors: HGP.
  - 5. Countertop Core: Hardwood-faced plywood, medium-density-fiberboard, or particleboard complying with ANSI A208.1, Grade M-2, Exterior Glue.
  - 6. Colors, Textures, and Patterns: As selected by FAA from plastic-laminate manufacturer's full range.

## 2.5 ACCESSORIES

- A. Slat walls
  - 1. Low Profile
  - 2. Stackable
  - 3. Capable of supporting a multitude of devices, light fixtures, shelves, articulating arms for monitors, phones etc.
  - 4. Horizontal supports slats spaced per console manufacturer's standard while meeting industry standards for utilizing maximum flexibility and infinite number of possibilities when locating the aforementioned devices of the user.
  - 5. Colors, Textures, and Patterns: As selected by FAA from manufacturer's full range.
  - 6. Capable of managing all cabling and wires originating from monitors and phones, managed through articulating arms, desktop printers, etc and feeding below to inside of consoles housing processors, shelving and access floors below consoles.
- B. Articulating Arms: Shall be compatible with slat wall system and capable of supporting the following components:
  - 1. 2 per arm - 24" diagonal (in widescreen aspect ratio) LCD flat screen Monitors weighing approximately 50 lbs.
  - 2. Light fixture weighing approximately 5 lbs.
  - 3. Phone system weighing approximately 5 lbs.
  - 4. Fully adjustable 360 degrees yet fully lockable in the desired position.
  - 5. Provide cable management integral with arm and slatwall.

## 2.6 CABLE MANAGEMENT

- A. Wireways shall be listed and labeled as defined by NFPA 70, article 100 by a testing agency acceptable to the authority having jurisdiction and marked for it's intended use.
- B. Wireways shall be located in the console in such a manner as to not impede full use and function of the all systems to reside in the console. They will not restrict access or removal of the CPU's from the console.
- C. Adaptability: wireways shall be adaptable to wireways in adjacent consoles.
- D. Separate wireway shall be provided for power and for data/phone systems.
- E. Cable management for accessories shall be such that wires and cables serving accessories are not excessively exposed on articulating arms or slatwalls.

## 2.7 ELECTRICAL DEVICES

- A. Electrical Devices, General: Provide units complete with metal enclosures, receptacles, terminals, switches, dimmers, device plates, accessories and gaskets required for mounting on consoles.
- B. Receptacles:
  - 1. Essential Type: 125V, 20 A Specification Grade. Comply with NEMA WD1, NEMA WD6 and UL 498. Configuration 5-20R. .
  - 2. Critical Type: 125V, 20A, Spec Grade. Comply with NEMA WD1 and NEMA WD6 and UL498. Configuration L5-20R.
- C. Switches: Comply with FS W-C-896, UL 20 and NEMA WD1. Provide single-pole, double-pole, or 3-way switches as required, rated 120 to 277-V ac and in amperage capacities to suit units served.
- D. Cover Plates: Type 304 stainless-steel cover plates with formed beveled edges.
- E. Cover-Plate Identification: Use 1/4-inch high letters unless otherwise indicated.
- F. Ventilation: As required to meet cooling requirements.
- G. Provide capability for each console section to be grounded/bonded to counterpoise meeting all FAA grounding standards. All grounding connections to grounding system shall be accomplished by FAA.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Production shall begin after the following requirements have been satisfied:

1. Design drawings have been approved by FAA.
2. Shop drawings have been approved by FAA.
3. All catalogue cuts, samples and submittals have been approved by the FAA
4. Mock-up Console has been approved.
5. All finishes have been approved.
6. Template drawings have been approved.
7. Individual consoles inspected and approved at manufacturers site prior to shipping.
8. Approved shipping schedule.
9. Proceed with production only after unsatisfactory conditions have been corrected.

### **3.2 INSTALLATION OF CONSOLES**

- A. Prior to installation, contractor shall visit site and notify FAA of any condition or deficiency that would prevent proper installation of the consoles.
- B. Contractor will be responsible for supervision of all on site personnel
- C. Installation of the consoles must be performed by fully trained, and qualified, personnel, who are certified by the contractor to install their product.
- D. Consoles will be installed on raised access floor having a concentrated load value of 1250 lbs and a uniform load rating of 300 pounds per square feet.
- E. Install level, plumb, and true.
- F. No cutting or drilling of console components on site will be tolerated unless approved by the COTR.
- G. Contractor will supply all necessary tools required for installation.
- H. Future reconfigurations by the FAA must not require special tools.
- I. Utility-Space Framing: Secure to floor with two fasteners at each frame.
- J. Bolt adjacent consoles together with joints that are flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16 inch.
- K. Install all hardware uniformly and precisely. Set hinges snug and flat in mortises.
- L. Adjust console panels and hardware so that doors and drawers align and operate properly, without warp or bind, and that all contact points meet accurately. Lubricate operating hardware as recommended by manufacturer.

### **3.3 INSTALLATION OF COUNTERTOPS**

- A. Abut top and edge surfaces in one true plane with flush hairline joints and with internal supports placed to prevent deflection. Locate joints only where shown on Shop Drawings.
- B. Fastening:
  - 1. Secure countertops, to cabinets with Z-type fasteners or equivalent, using four or more fasteners at each cabinet front and back, and two or more at each side and end.

### **3.4 INSTALLATION OF ACCESSORIES**

- A. Install accessories according to Shop Drawings and manufacturer's written instructions.

### **3.5 INSTALLATION OF ELECTRICAL DEVICES**

- A. Install devices in accordance with approved Shop Drawings and manufacturer's written instructions.

### **3.6 CLEANING AND PROTECTING**

- A. Protect consoles surfaces during shipping, delivery and installation to prevent any damage.
- B. Clean finished surfaces to match original factory approved console finish.
- C. All shipping containers, pallets, packaging, excess material, damaged parts etc. shall be properly removed from the site.

### **3.7 SCHEDULE**

- A. The contractor will submit a schedule which will validate the FAA's proposed schedule dates:
  - 1. FAA receives shop drawings Feb 19, 2010
  - 2. FAA signs off approved shop drawings Feb 26, 2010
  - 3. Approved Templates received by FAA on site May 1, 2010

- |                                       |               |
|---------------------------------------|---------------|
| 4. Manufacturing of consoles complete | June 4, 2010  |
| 5. Ship and receive Consoles          | June 11, 2010 |
| 6. Installation Complete              | July 16, 2010 |
| 7. Punchlist and Acceptance           | July 23, 2010 |
- B. The schedule dates are tentative and are dependant upon other contracts, completion dates etc. These dates could vary but the durations will remain the same. Contractor must notify the FAA immediately of any potential slippage in schedule due to unforeseen circumstances with other contracts and trades.

### 3.8 WARRANTY

- A. One year parts and labor for full replacement.
- B. Warranty to commence at completion of installation and FAA acceptance.

**END OF SECTION 12361**